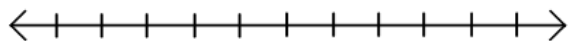


## Are You Ready Chapter 1 Pretest &amp; skills

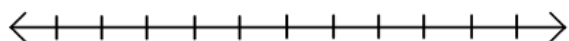
**Attendance Problems**

Graph each inequality.

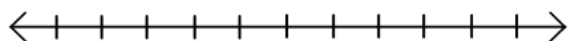
1.  $x \geq 3$



2.  $2 \leq x \leq 6$



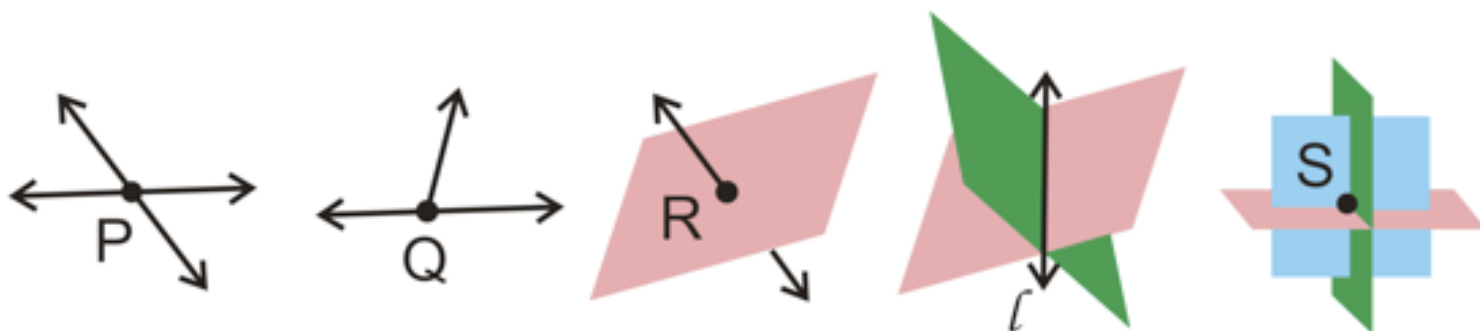
3.  $x > 1$  or  $x < 0$



Vocabulary		
undefined term	point	line
plane	collinear	coplanar
segment	endpoint	ray
opposite rays	postulate	

- I can identify, name, and draw points, lines, segments, rays, and planes.
- I can apply basic facts about points, lines, and planes.

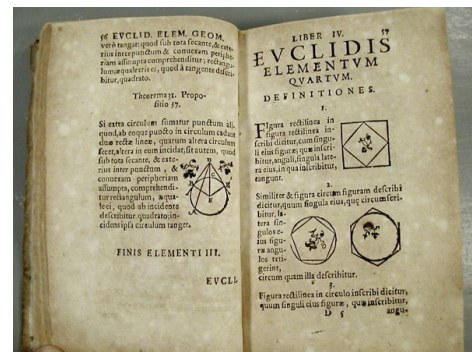
**Common Core: CC.9-12.G.CO.1** Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.




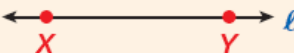
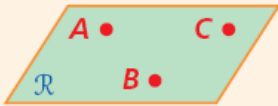
The most basic figures in geometry are **undefined terms**, which cannot be defined by using other figures. The undefined terms *point*, *line*, and *plane* are the building blocks of geometry.

### Euclid's Elements:

<https://www.youtube.com/watch?v=WqzK3UAXaHs>



### Undefined Terms

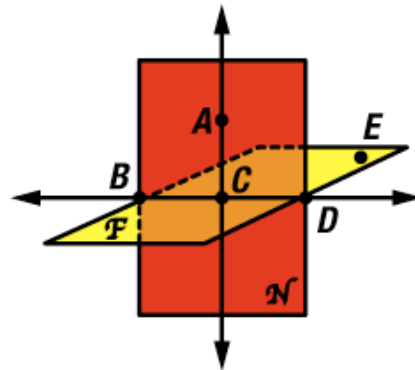
TERM	NAME	DIAGRAM
A <b>point</b> names a location and has no size. It is represented by a dot.	A capital letter point <b>P</b>	
A <b>line</b> is a straight path that has no thickness and extends forever.	A lowercase letter or two points on the line line <b>l</b> , <b>XY</b> or <b>YX</b>	
A <b>plane</b> is a flat surface that has no thickness and extends forever.	A script capital letter or three points not on a line plane <b>R</b> or plane <b>ABC</b>	

- In geometry, what does a prefix of co- imply?
- Compare and contrast collinear and noncollinear points.
- Compare and contrast coplanar and noncoplanar points.

**Video Example 1**

**A.** Find four coplanar points.

**B.** Name two lines.

**1****Naming Points, Lines, and Planes**

Refer to the design in the roof of Beijing's National Stadium.

**A**

Name four coplanar points.

$K$ ,  $L$ ,  $M$ , and  $N$  all lie in plane  $\mathcal{R}$ .

**B**

Name three lines.

$\overleftrightarrow{AB}$ ,  $\overleftrightarrow{BC}$ , and  $\overleftrightarrow{CA}$ .

**Q:** What did the little acorn say when it grew up?

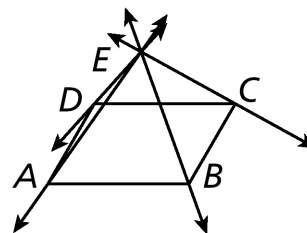
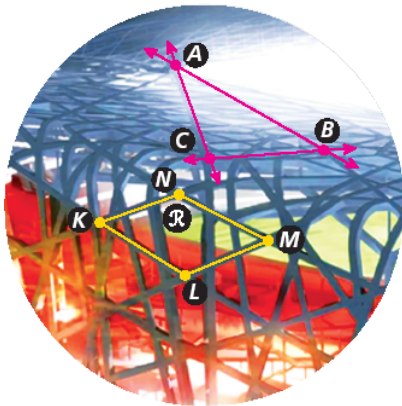
**A:** "Geometry"

"Joy is wealth and love is the legal tender of the soul." -- Robert G. Ingersoll

**Example 1.**

A. Find four coplanar points

B. Name three lines.

7. **Guided Practice.** Use the diagram to name two planes.**Segments and Rays**

DEFINITION	NAME	DIAGRAM
A <b>segment</b> , or line segment, is the part of a line consisting of two points and all points between them.	The two endpoints $\overline{AB}$ or $\overline{BA}$	
An <b>endpoint</b> is a point at one end of a segment or the starting point of a ray.	A capital letter $C$ and $D$	
A <b>ray</b> is a part of a line that starts at an endpoint and extends forever in one direction.	Its endpoint and any other point on the ray $\overrightarrow{RS}$	
<b>Opposite rays</b> are two rays that have a common endpoint and form a line.	The common endpoint and any other point on each ray $\overrightarrow{EF}$ and $\overrightarrow{EG}$	

**Video Example 2. Draw and label each of the following.**

A. Draw a segment with endpoints A and B.

B. Draw opposite rays with common endpoint W.

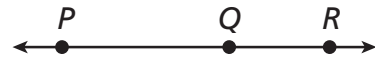
**2****Drawing Segments and Rays**

Draw and label each of the following.

**A** a segment with endpoints  $U$  and  $V$



**B** opposite rays with a common endpoint  $Q$

**Example 2. Draw and label each of the following.**

A. A segment with endpoints  $M$  and  $N$ .

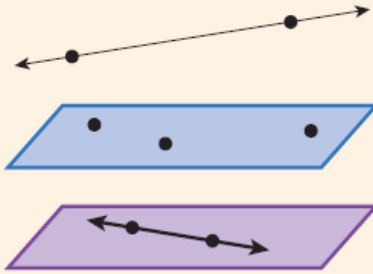
B. Opposite rays with a common endpoint  $T$ .

8. **Guided Practice.** Draw and label a ray with endpoint  $M$  that contains  $N$ .

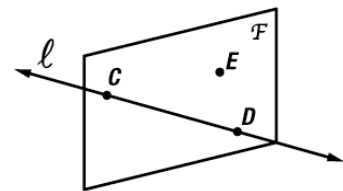
9. What is a postulate?

**Postulates** **Points, Lines, and Planes**

- 1-1-1** Through any two points there is exactly one line.
- 1-1-2** Through any three noncollinear points there is exactly one plane containing them.
- 1-1-3** If two points lie in a plane, then the line containing those points lies in the plane.

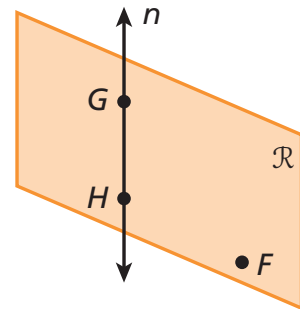


**Video Example 3:** Name a line that passes through two points.

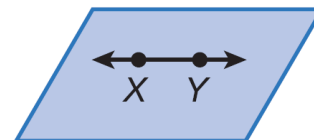
**3** **Identifying Points and Lines in a Plane**

Name a line that passes through two points.

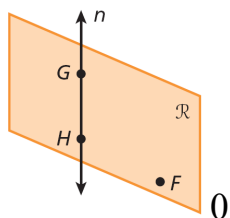
There is exactly one line  $n$  passing through  $G$  and  $H$ .



**Example 3:** Name a line that passes through two points.



**10. Guided Practice.** Name a plane that contains three noncollinear points.



Recall that a system of equations is a set of two or more equations containing two or more of the same variables. The coordinates of the solution of the system satisfy all equations in the system. These coordinates also locate the point where all the graphs of the equations in the system *intersect*.

An intersection is the set of all points that two or more figures have in common. The next two postulates describe intersections involving lines and planes.

### Postulates

#### Intersection of Lines and Planes

**1-1-4** If two lines intersect, then they intersect in exactly one point.

**1-1-5** If two planes intersect, then they intersect in exactly one line.

**1-1 Understanding Points, Lines, and Planes Study Guide:** (p 9) 13, 15-19.

Use a dashed line to show the hidden parts of any figure that you are drawing. A dashed line will indicate the part of the figure that is not seen.

**Refer to Video Example 4.**

A) Draw two lines that are intersecting.

B) Draw two planes that intersect in one line.

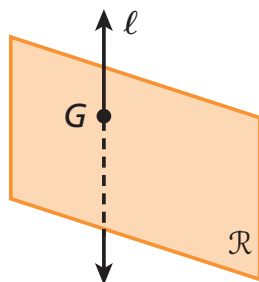
C) Sketch a second line that intersects both planes, but does not lie in either plane.



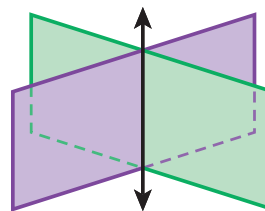
## 4 Representing Intersections

Sketch a figure that shows each of the following.

**A** A line intersects a plane, but does not lie in the plane.



**B** Two planes intersect in one line.



### Example 4

A. Sketch two lines intersecting in exactly one point.

B. Sketch a figure that shows a line that lies in a plane.

**11. Guided Practice.** Sketch a figure that shows two lines intersect in one point in a plane, but only one of the lines lies in the plane.

**1-1 Understanding Points, Lines, and Planes Study Guide:** (p 9) 13, 15-21, 22-30 even, 31-34, 36, 38.